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HALLENBECK et al.	
Application Number	**Filed**
08/487992	6-07-95
Group Art Unit	**Examiner**

Paper No. #22

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US005998205A

United States Patent [19]

Hallenbeck et al.

[11] Patent Number: 5,998,205

[45] Date of Patent: Dec. 7, 1999

[54] **VECTORS FOR TISSUE-SPECIFIC REPLICATION**

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[21] Appl. No.: **08/849,117**

[22] PCT Filed: **Nov. 28, 1995**

[86] PCT No.: **PCT/US95/15455**

§ 371 Date: **Jul. 1, 1997**

§ 102(e) Date: **Jul. 1, 1997**

[87] PCT Pub. No.: **WO96/17053**

PCT Pub. Date: **Jun. 6, 1996**

Related U.S. Application Data

[63] Continuation-in-part of application No. 08/487,992, Jun. 7, 1995, abandoned, which is a continuation-in-part of application No. 08/348,258, Nov. 28, 1994, abandoned.

[51] **Int. Cl.**[6] **C12N 15/00**

[52] **U.S. Cl.** **435/325**; 514/44; 424/93.21; 536/23.1; 435/69.1; 435/320.1; 435/455

[58] **Field of Search** 435/172.3, 320.1, 435/325, 455, 69.1; 514/44; 424/93.21; 536/23.1; 935/33, 52, 55, 66

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[57] **ABSTRACT**

The invention generally relates to targeted gene therapy using recombinant vectors and particularly adenovirus vectors. The invention specifically relates to replication-conditional vectors and methods for using them. Such vectors are able to selectively replicate in a target tissue to provide a therapeutic benefit from the presence of the vector per se or from heterologous gene products expressed from the vector and distributed throughout the tissue. In such vectors, a gene essential for replication is placed under the control of a heterologous tissue-specific transcriptional regulatory sequence. Thus, replication is conditioned on the presence of a factor(s) that induces transcription or the absence of a factor(s) that ihibits transcription of the gene by means of the transcriptional regulatory sequence with this vector; therefore, a target tissue can be selectively treated.

20 Claims, 5 Drawing Sheets